



5-2019

Perceptions and Food Acquisition Behaviors among Food Pantry Users in Rural Appalachia

Adeline Mae Grier-Welch

University of Tennessee, agrierwe@vols.utk.edu

Follow this and additional works at: https://trace.tennessee.edu/utk_gradthes

Recommended Citation

Grier-Welch, Adeline Mae, "Perceptions and Food Acquisition Behaviors among Food Pantry Users in Rural Appalachia. " Master's Thesis, University of Tennessee, 2019.
https://trace.tennessee.edu/utk_gradthes/5474

This Thesis is brought to you for free and open access by the Graduate School at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Masters Theses by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

To the Graduate Council:

I am submitting herewith a thesis written by Adeline Mae Grier-Welch entitled "Perceptions and Food Acquisition Behaviors among Food Pantry Users in Rural Appalachia." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nutrition.

Elizabeth Anderson Steeves, Major Professor

We have read this thesis and recommend its acceptance:

Katie Kavanagh, Marsha Spence

Accepted for the Council:

Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

Perceptions and Food Acquisition Behaviors among Food Pantry Users in Rural Appalachia

A Thesis Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Adeline Mae Grier-Welch
May 2019

ACKNOWLEDGEMENTS

I would like to thank my advisor, Dr. Elizabeth Anderson Steeves, and committee members, Drs. Katie Kavanagh and Marsha Spence of the Department of Nutrition for their feedback, guidance, and support. Additionally, I would like to thank Gail Root and Ruth Ivey at Second Harvest Food Bank of East Tennessee for their input on data collection tools and help identifying partner food pantries. Furthermore, I would like to thank the staff at collaborating food pantries for assisting with participant recruitment and providing a location for interviews to take place. I would like to thank Jaime Marquis, the undergraduate research assistant who worked on this project, for her input and tremendous help during data transcription and analysis as well. Finally, I would like to acknowledge and thank the research participants who made this research possible. I am grateful for their willingness to share sensitive information about their lives and experience using food pantries.

ABSTRACT

Objective: To ascertain how food pantry users perceive their use of food pantries and how the food pantry fits into the broader scope of food acquisition among rural Appalachian households.

Design: Using a grounded theory approach, semi-structured interviews with food pantry users were conducted in-person and over-the-phone. Verbatim interview transcripts were uploaded into NVivo 11.4 software for thematic analysis and theory formulation. Demographic data were collected via survey.

Setting: Rural Appalachian food pantries.

Subjects: Participants (n=20) were predominately female (80%) and Caucasian (95%) with a mean age of 48 years (\pm SD= 13.4) with experience using food pantries in rural Appalachia.

Results: Food pantry users reported consistently acquiring food from the grocery store, food pantry, and family and friends. Reciprocal, informal, food-sharing networks were common. Factors such as lack of transportation, uncontrollable factors, and insufficient food quantity depleted food resources. Food stretching, refusing to waste food, using money-saving strategies, and the overall acceptability of food pantry food enhanced food resources. Food pantry users reported having to “make it work” when food resources were low.

Conclusions: Food pantries are a consistent food source for those who use them. Food pantry users are savvy with their resources and employ multiple strategies to maintain their food supply despite high levels of food insecurity. While most members in the sample were pleased with their food pantry experiences, areas remain to improve the food pantry experience while promoting adequate nutrition.

Keywords: food pantry, food insecurity, food acquisition, Appalachia, nutrition, dietary intake

TABLE OF CONTENTS

CHAPTER I: LITERATURE REVIEW	1
Introduction.....	2
Feeding America Network	3
Second Harvest Food Bank of East Tennessee	3
Food Insecurity in Tennessee	5
Food Pantry User Demographics.....	7
The Food Environment at Food Pantries	9
Food Acquisition and Consumption	10
Diet Quality and Food Group Adequacy of Food Pantry Users	10
Current Nutrition Policy and Interventions.....	13
Barriers to Modifying Foods and Beverages Distributed by Food Banks.....	15
Gaps in the Literature.....	15
Specific Aims	16
Methods	16
Summary.....	17
CHAPTER II: MANUSCRIPT	18
Abstract	19
Background	20
Methods	22
Results.....	25
Discussion	36
Conclusion	39
CHAPTER III: EXPANDED METHODS.....	40
REFERENCES	44
APPENDICES.....	49
Appendix A: Recruitment Poster.....	50
Appendix B: Informed Consent Statement	51
Appendix C: Interview Guide.....	53
VITA.....	60

CHAPTER I: LITERATURE REVIEW

Introduction

Food insecurity is defined as “the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways”.¹ Individuals who experience food insecurity are more likely to suffer from inadequate nutrition along with a variety of health consequences such as higher rates of obesity, increased risk of developing chronic heart disease, diabetes, heart attack, hypertension, and stroke than those who are food secure.²⁻⁷ Additionally, food insecurity has been linked with depression and other mental health disorders, especially among women.⁸ Children who experience food insecurity are at a higher risk of excessive weight gain, reduced social skill development and diminished academic performance.⁹

Food insecure populations may struggle to obtain an adequate quantity of food to support their nutritional needs, potentially leading to a reliance on foods from food assistance programs. As the central entity of the emergency food system, food banks collect donations of nonperishable, fresh, and frozen foods and beverages and distribute them to partner organizations like food pantries who issue food to individuals and households in a variety of manners.¹⁰ Food banks act as a food storage and distribution hub for partner agencies and rarely give food directly to individual clients, while food pantries provide food and other services directly to the community.¹¹ The primary modes of distribution of food to clients at food pantries include dissemination of food parcels or boxes (food baskets containing a variety of food items predetermined by food pantry staff), client self-service (food pantry users may select desired food items from inventory, within limits set by food pantry staff), or a hybrid of the two.¹² Since food pantry users are an already nutritionally compromised population at a higher risk of

developing chronic disease, it is important to study their experiences to understand how food pantries can best serve their clients.

Feeding America Network

Feeding America is the largest domestic hunger-relief organization in the United States.¹³ The Feeding America network is comprised of 200 food banks, serving all 50 states.¹³ In fact, food banks in the Feeding America network were found to serve 46.5 million people (15.1% of the American population) in the United States, including 12 million children and 7 million seniors.¹³ Many food banks and pantries rely on the Feeding America network to provide the majority of the food items that they distribute. Therefore, the expansive influence that food banks have on provision of food by food pantries should not be overlooked when studying food pantry operations.

Second Harvest Food Bank of East Tennessee

Second Harvest Food Bank of East Tennessee (hereafter referred to as “Second Harvest”), a member of the Feeding America Network, provides fresh, frozen, and non-perishable food items to 199 food pantries in all 18 counties of East Tennessee along with soup kitchens, group homes, youth organizations, senior centers, shelters, schools, and rehabilitation centers, as highlighted by Second Harvest’s organizational chart (Figure 1.1).¹⁴ Second Harvest is the primary source of food for many of its non-profit partners who have a shared goal of hunger relief. Most of Second Harvest’s food comes from donations made by local grocers, restaurants, manufacturers, distributors, and food drives.¹⁴ Other food items are purchased at bulk rates by brokered discounts directly from manufacturers or other sources. Food items may be fresh, frozen, canned, or prepared and packaged. After inspecting the donations and purchases for damage and expiration date, staff and volunteers at Second Harvest deliver the food items to

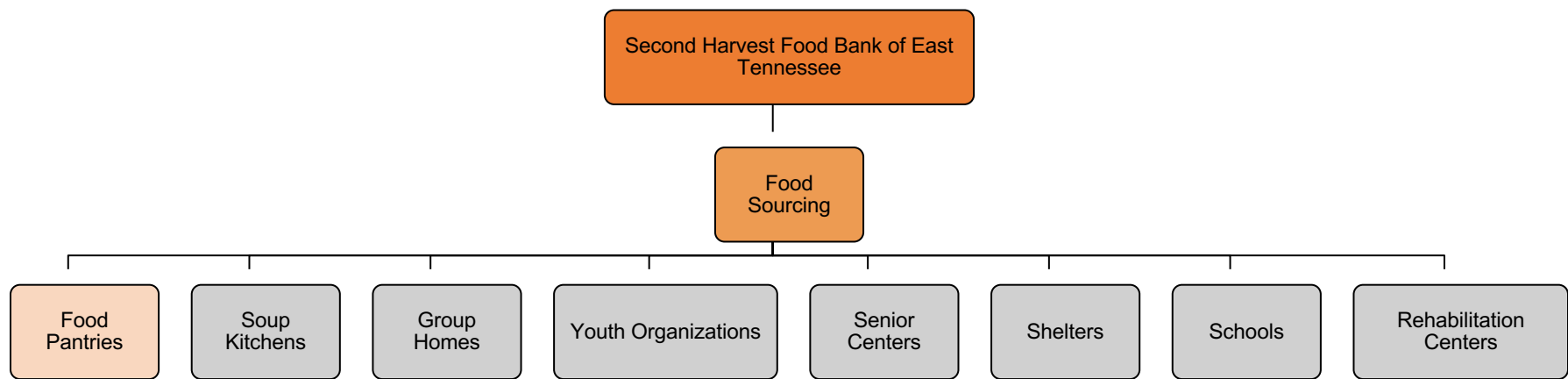


Figure 1.1. Second Harvest's organizational chart.¹⁴

partner agencies (like food pantries) either for free or at a discounted per pound rate.¹⁴ Most food pantries in East Tennessee purchase food items from Second Harvest to distribute to their clients.

Food Insecurity in Tennessee

In 2016, 12.3% of American households were classified as food insecure.¹⁵ Compared with other regions in the United States, the rate of food insecurity is highest in the Southern region (13.5%) which includes Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.^{15,16} In fact, 13.4% of Tennessee households were classified as food insecure, a rate that is similar to that of the Southern region and 1.1% higher than that of the national average.¹⁵ This 1.1% difference indicates that people living in Tennessee may rely more heavily on food assistance like food pantries for food.

The state of Tennessee is often divided into three “grand divisions”; West, Middle, and East. East Tennessee is different from the other divisions of Tennessee because all of its counties fall within the Appalachian Region.¹⁷ The Appalachian Region, also referred to as Appalachia, spans from New York to Mississippi along the spine of the Appalachian mountain range. Forty-two percent of the people residing in this region live in rural areas, compared to 20% of the population of the United States.¹⁷ Food insecurity is particularly problematic among rural populations like Appalachia. The prevalence of food insecurity in rural (nonmetropolitan) areas is 15.0%, a rate that is higher than metropolitan and suburban areas, which are 14.2% and 9.5%, respectively (Figure 1.2 on the following page).¹⁵ A variety of factors contribute to this disparity including higher unemployment rates, lower educational levels, a greater concentration of jobs in low-wage industries, and reduced access to and availability of childcare services, transportation, and communication networks in rural areas when compared to metropolitan or suburban areas.¹⁸

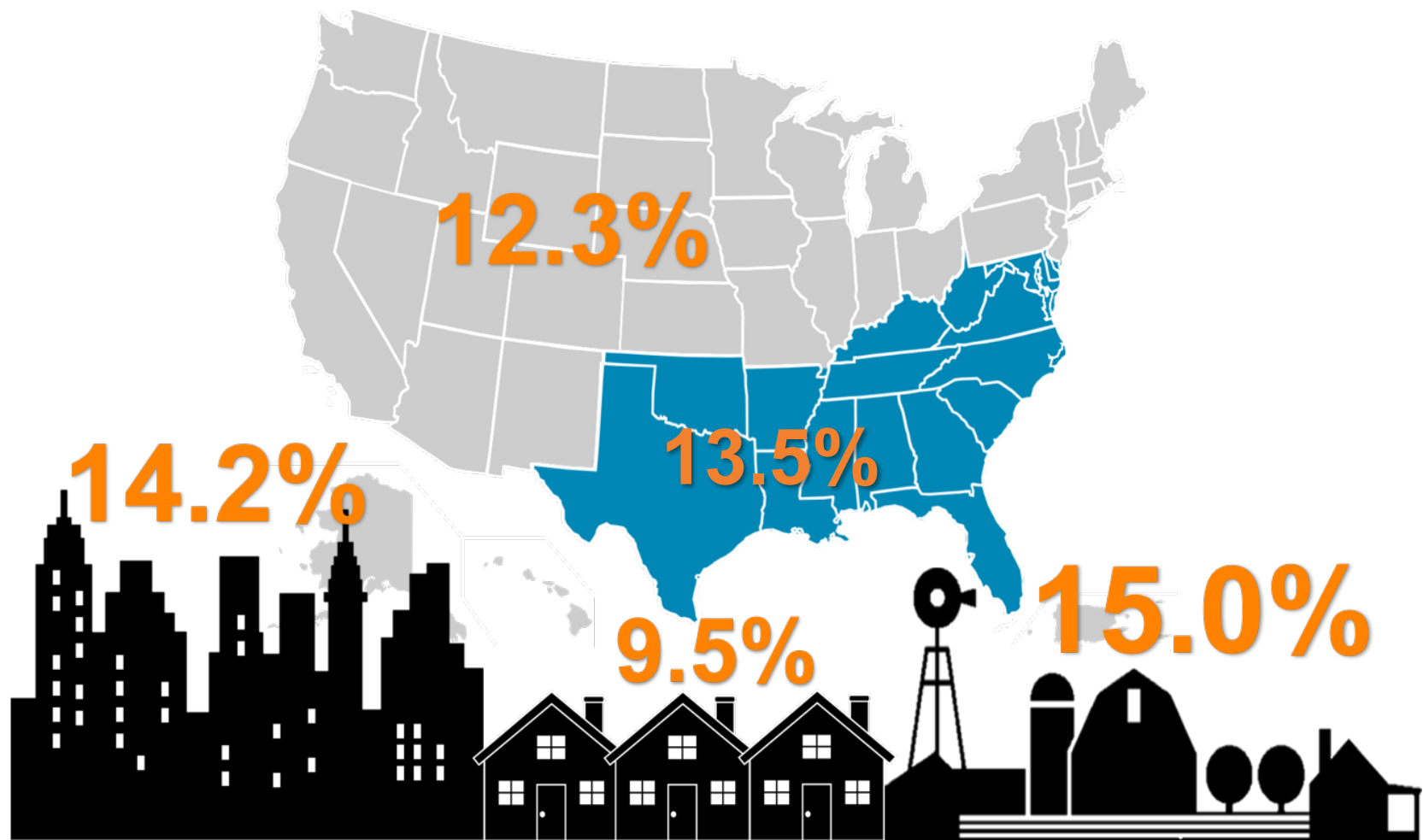


Figure 1.2. Food insecurity rates in the United States, the Southern region, and a comparison of metropolitan, suburban, and rural areas, respectively.¹⁵

Therefore, it is important to study the experiences of food insecure families in rural Appalachian areas of East Tennessee to gain a better understanding of their food acquisition behaviors.

Currently, there is limited research concerning whether reliance on food pantries for food negatively affects nutritional status and health outcomes. The existing literature base provides a picture of the demographics of the typical food pantry user,¹³ assesses typical dietary intake of food pantry users,^{12,19–24} and explores nutrition policies and barriers of both food banks and pantries from a managerial perspective.^{10,25} The literature measures nutritional quality compared to either existing national recommendations or average intakes among the general population of the country in which the study was conducted. Common findings report that due to food banks' dependence on donations, highly processed, energy-dense snacks, high sodium canned items, and sugar-sweetened beverages are often staples at food pantries.²⁶ Studies have shown that food pantry users chronically under consume fruits, vegetables, whole grains, dairy products, and essential vitamins and minerals, contributing to poor overall diets.^{20,21,23–25,27,28} The following sections provide a review of the current literature focused on providing an overview of food pantry usage while assessing the nutritional quality of food items distributed at food pantries. Barriers that prevent food pantries from issuing nutritious foods are explored and successful nutrition-related interventions at food pantries are highlighted.

Food Pantry User Demographics

In 2014, the Feeding America network conducted a large study of partner agencies to collect baseline data concerning food pantry usage. A third party research service was contracted to develop and oversee the research processes used in the study as well as analyze the collected data.²⁹ Both agencies (primarily food pantries) and clients using the agencies were sampled and surveyed. Agency surveys were web-based while trained volunteer data collectors administered

client surveys, which were available in five languages.²⁹ Over 58,000 food pantries were surveyed resulting in the creation of comprehensive demographic profiles of people utilizing food assistance from hunger relief organizations in the Feeding America network.¹³ The results of the survey showed that 39% of participating households included at least one child compared to 32% of the general population, indicating the large impact that food assistance services have on American children. Although 43% of food pantry users identified as white, minorities were more likely to use food assistance services than their white counterparts.¹³

Survey results showed that while 55% of households utilizing the Feeding America network receive SNAP (Supplemental Nutrition Assistance Program) benefits, 72% of households that use food assistance and do not receive SNAP benefits might be eligible.¹³ This discrepancy indicates that further coordination of other possible food assistance or social service programs and resources and might be important for food pantry users. Although many households utilize multiple methods of food assistance, they often fall short, leading to financial and nutritional compromises and coping strategies to counteract the burden of food insecurity. Households are often forced to choose between essential needs including utilities, transportation, medical care, housing, and education when allocating their limited funds. In fact, when deciding between paying for food and essential needs, 67% of households reporting choosing transportation, 66% chose medical care, 60% chose utilities, 57% chose housing, and 31% choose education.¹³ Making these spending tradeoffs only adds to the stress felt by food secure individuals and households. To cut down on food costs, 79% of people surveyed indicated that they resorted to purchasing inexpensive, unhealthy food, 53% received help from family or friends, 40% watered down food or drinks, and 35% sold or pawned personal property.¹³ Considering health, these coping strategies have a negative impact. For example, inexpensive,

unhealthy foods are often of low nutritional value and provide high amounts of sugar, sodium, and fat, further exacerbating the burden of obesity and nutrition-related chronic diseases.

The same Feeding America study uncovered alarming health disparities experienced by the food pantry-using population, particularly related to chronic disease. Forty-seven percent of food pantry users reported being in either fair or poor health with 58% of households reporting one member with hypertension and 33% reporting a household member with diabetes.¹³ These rates are markedly higher than the general US population as the prevalence of hypertension and diabetes is 29.1% and 9.4%, respectively.^{18,19} Further, multiple studies have found higher rates of obesity among food pantry users, especially women, when compared to their non-food pantry-using counterparts.^{7,32}

The Food Environment at Food Pantries

The food environment (defined as “the physical presence of food that affects a person’s diet”) at food pantries, influences client food selection.^{33,34} As previously reported, processed, energy-dense snacks, high sodium canned items, and sugar-sweetened beverages are often staples at food pantries.²⁶ In client self-service models in which food pantry users “shop” for foods at the pantry, the food environment can play a large role in influencing the types of foods selected. Even food pantries that provide food as part of a predetermined box often have a “free-will” section in which clients may choose from a selection of cakes, cookies, and other sweet baked goods that have been donated by local bakeries or grocery stores. Product placement and presentation of less healthy foods at food pantries as well as the pantry layout, often unintentionally guides food pantry users to choose less healthy items.³⁵ Although some food pantries have implemented food environment shifts based on behavioral economic strategies,

most lack the time, resources, and knowledge to nudge their clients towards healthier choices when available.^{35,36}

Food Acquisition and Consumption

It seems logical that foods acquired from locations outside the home like grocery stores, convenience stores, gardens, food pantries, and friends and family members would be closely linked with dietary intake, but the relationship between food acquisition and food consumption has not been thoroughly studied. A 2017 study conducted to determine whether food purchases accurately predicted dietary intake found a moderate agreement between the measured nutritional profile of foods purchased outside the home and the dietary intake of the subjects who purchased those foods.³⁷ Other studies have found that food purchases are strongly correlated with food and nutrient intake.^{38,39} Therefore, there appears to be an agreement between what people buy and what they eat. The dearth of literature relating food purchasing and consumption, and complete lack of empirical data demonstrating a relationship between food pantry food acquisition to dietary intake, demonstrate a need for additional assessments in this area. However, we hypothesize that although buying food from the grocery store and acquiring food from food pantries is different, obtaining food from food pantries is still a mode of food acquisition, suggesting that foods acquired from food pantries impacts dietary intake.

Diet Quality and Food Group Adequacy of Food Pantry Users

To date, only one study was identified that addressed overall diet quality among food pantry participants. Diet quality was assessed using the Healthy Eating Index-2005 (HEI-2005), a Center for Nutrition Policy and Promotion-created measure of overall diet quality based on the Dietary Guidelines for Americans.^{40,41} The HEI-2005 score scale ranges from zero to 100 with lower scores indicating poorer diet quality and a score of 100 being optimal diet quality. Total

HEI-2005 scores were generated based on the following components: fruit (total and whole), vegetable (total and dark green/orange), grains (including whole grains), milk, protein (meat and beans), and sodium intake. Results were in line with observations of low socioeconomic status populations, indicating that diet quality among food pantry users is largely poor.^{20,21,23–25,27,28,42} Only 29% of the food pantry users surveyed scored above 50 on the HEI-2005 and no participants scored above 80.²⁰ Trends from previous studies using the HEI-2005 model found that while the general American population scored below the recommended score of 80, higher income groups had higher HEI-2005 scores than lower income groups, proposing that those with higher incomes eat higher quality diets.⁴³

Multiple studies indicate that total energy intake among food pantry users tends to be significantly higher than recommendations.^{12,27,28} Although food pantry users typically have an extremely variable dietary pattern throughout the course of the month, energy intake remains consistently higher than recommended level.¹² The greater than average energy intakes could be partially explained by the high rates of sugar-sweetened beverage consumption reported by food pantry users.^{27,28} Additionally, sugar-sweetened beverages comprise a large portion of food donations to food pantries, creating a consistent inventory of soda at food pantries, and increasing soda distribution to clients.^{10,25}

Several studies showed that food pantry participants did not receive or consume adequate amounts of foods from major food groups including fruits, vegetables, grains, and dairy/milk. Protein was the only major food group in which rates of consumption among food pantry users was either adequate or higher than the recommended value.^{10,20,24,28} For example, a study of American food pantry users²⁰ found that 70.9% of participants reported consuming no fruit and 68.8% consumed no whole grains, dark green or orange vegetables, or legumes while 70.8% of

respondents consumed sufficient amounts of meat and beans, making protein the only category in which intake was deemed adequate. However, protein foods distributed at food pantries are typically high in total fat, saturated fat, carbohydrate, sodium, and energy since they tend to be in the form of processed and packaged items. It has also been found that protein derived from animal sources is distributed in higher proportions than vegetarian proteins such as soy products and legumes.²⁸

Food pantry users rarely meet minimum recommendations for grain consumption, especially whole grains.^{20,27} An analysis of food baskets distributed by a Dutch food pantry found that only 69% of the food baskets contained grains of any type such as rice or flour, contributing to inadequate amount of fiber-containing foods.²⁸ However, micronutrients commonly found in bread products such as thiamin and magnesium were generally found to meet recommendations,¹² most likely due to fortified cereals and processed grain items.

Compared to both recommended values and the general population, food pantry users chronically under consume adequate amounts of milk and dairy-containing foods.^{12,21} As a consequence of inadequate milk and dairy consumption, low calcium intakes among food pantry users are common.^{12,19,21} Markedly low calcium intakes were found among women;²¹ the most at-risk group for the development of osteoporosis related to low bone density.

Fruit and vegetable consumption among food pantry users is much lower than recommendations.^{20,21,23–25,27,28} Based on HEI scores and results from food frequency questionnaires, food pantry users were found to have consistently lower intakes of fruit and vegetables in comparison to the general population.^{10,20,21} One would expect that a low fruit and vegetable consumption would lead to vitamin and mineral deficiencies, but conflicting results were found concerning vitamin intake. The majority of studies showed that vitamin A and C

intake was above average in the population of food pantry users, but that finding was not consistent among all studies.^{12,19,21}

The overwhelmingly poor diet quality among food pantry users may be due to unhealthy food environments at food pantries and could be partially responsible for higher than average rates of chronic diseases in this population.^{7,13,32} The health disparities experienced by food pantry users indicates that they may require foods from food pantries with a different nutritional profile than what is currently being distributed, primarily less sodium, sugar and calories, to prevent the onset or worsening of chronic disease. Understanding how food pantry users perceive the foods they receive from food pantries coupled with identifying other common food sources will provide important information that will help inform programmatic changes focused on increasing the diet quality of food pantry users.

Current Nutrition Policy and Interventions

Qualitative research aimed to assess food bank culture, capacity, and nutrition policy found that only seven percent of food banks surveyed indicated having a formal nutrition policy, but 94% reported having either a high (36%) or medium (58%) level of commitment to nutrition when rendering and distributing food items to clients.¹⁰ Although only a small percentage of food banks had a formal nutrition policy, 55% said that they have policies and/or guidelines in place to help increase their inventory of healthy food while 30% had policies and/or guidelines in place to decrease their inventory of less healthy foods. Systems for profiling foods based on nutrition are emerging as food bank staff increases their awareness and concern about the nutritional needs of their clients.²⁵

The current research shows that food bank staff are concerned about the nutritional quality of the foods they distribute, but very few have formal nutrition policies, indicating that

recommendations for programmatic changes could be very useful. Further, the existing nutrition-related recommendations are general, and have not been tested in rural populations.

Understanding the food acquisition behaviors of the people served by rural food pantries may help identify the areas of their program that can be altered to promote health and nutrition among their clients.

Although not driven by policy, nutrition-focused interventions, recommendations to increase healthy food availability, and nutrition education training materials for food pantries have become increasingly more common in the last five years. Feeding America, in partnership with the UCSF Center for Vulnerable Populations at Zuckerberg San Francisco General Hospital, the Root Cause Coalition, Partnership for a Healthier America, the Nutrition and Obesity Policy Research and Evaluation Network, MyPlate, the Center for Health Law and Policy Innovation of Harvard Law School, and the Academy of Nutrition and Dietetics has taken a lead role in developing materials and recommendations for health-focused food banking via their Hunger + Health website, which provides information and resources to help promote nutrition and health among the food insecure.⁴⁴

A novel food pantry model known as the Freshplace implemented in Hartford, Connecticut was developed to address root causes of poverty while providing food to those in need.⁴⁵ The Freshplace model was created in partnership between Foodshare, the Chrysalis Center Inc., and the Junior League of Hartford and the University of Connecticut.⁴⁶ The Freshplace program was initially implemented as a randomized controlled trial and developed using the Stages of Change Model as a theoretical framework. Clients were allowed to “shop” for food at the Freshplace pantry twice per month and were required to meet with a case manager once a month to set and monitor small, achievable goals related to food security and self-

sufficiency.⁴⁶ Results from Freshplace showed that the model was effective in increasing food security status, building self-efficacy, and modestly increasing fruit and vegetable intake among participants when compared to a control group accessing a typical food pantry.^{47,48} However, despite all the work being done to increase the health of those who access food pantries, clear guidelines that are applicable to rural populations have not been developed.

Barriers to Modifying Foods and Beverages Distributed by Food Banks

In-depth interviews with food bank staff indicated that a major barrier to implementing bans on certain unhealthy foods is fear of severing ties with chief food donors, on whom they rely heavily on for food donations and financial support.¹⁰ Other perceived barriers include lack of storage space and equipment, especially refrigerator space to properly store fresh items, concerns about food waste, a shortage of on-staff nutrition professionals, variability of food donations, financial constraints, which increase reliance of food donations from donors who may not be committed to nutrition, and concerns that food insecure clients may not have the necessary means to store and prepare fresh produce.^{10,25} Despite the barriers, the results of the study show that nutritional quality of food inventory at food banks is becoming a bigger concern and food bank personnel are beginning to respond in a systematic manner.

Gaps in the Literature

While the available quantitative information concerning the demographics, dietary intake, and health of food pantry users is extremely helpful and relevant, the current literature does not provide rich qualitative data from food pantry users. Without this qualitative data, there remains a significant lack of understanding of how food pantry users perceive their use of food pantries, the food items that they find most useful, and how food assistance fits into the broader scope of the diet of very-low income households. Additionally, previous research concerning food

acquisition habits among food pantry users lacks important detail, and qualitative data describing experiences and perceptions has not been published. This information is critical to inform appropriate policy and programmatic changes to address health and nutrition in food pantry services.

Specific Aims

The aims of this research are to identify potential strategies for improving promotion of health through food pantry services in vulnerable populations in East Tennessee by conducting research to:

- Gain understanding of perceptions and factors related to food assistance program usage among food pantry users
- In addition to the food pantry, explore other food sources and food acquisition behaviors of food pantry users

Methods

A grounded theory approach was selected as the most appropriate method to meet the specific aims of this research. Grounded theory is a qualitative research methodology that results in the development of a model or theory to help explain a phenomenon.⁴⁹ The name grounded theory is meant to represent the “grounding [of] concepts in data” in the process of theory generation.⁵⁰ The grounded theory that emerges from the data is often used as a tool to provide insight and understanding to a particular topic of study as well as to serve as a useful guide to future action.⁵⁰ The application of grounded theory is preferred in situations in which individuals “interact, take actions, or engage in a process in response to a phenomenon”.⁴⁹ In grounded theory research, data collection and analysis occur simultaneously,⁵¹ allowing for constant improvement of collection instruments.

Grounded theory is an appropriate research method for a variety of reasons. First, grounded theory seeks to study individuals who have experienced the phenomenon under varying conditions.⁵² It is expected that pantry users will have a variety of different experiences that shape their food acquisition behaviors and influence their use of food pantries. Second, grounded theory answers the question of how a social process or phenomenon occurs in the context of a specific environment.⁵² In this case, how food acquisition is experienced by those who use food pantries in rural Appalachia. Third, theory generation will allow for the synthesis and meaningful organization of the interconnected relationships of multiple factors that influence food acquisition behaviors of food pantry users.

Summary

This is the first known study to use a grounded theory approach to qualitatively explore and understand the perceptions and food acquisition practices of food pantry users. Food pantries are a critical point of food access among nutritionally compromised populations, making food pantries an important resource for modeling and supporting healthful behaviors. This research will explore perceptions of food pantry usage and food acquisition behaviors among food pantry users that will aid in the creation of nutrition-focused policy and programmatic resources to better enhance the goods and services provided by food pantries. Using this unique perspective, new information can be generated and disseminated to health professionals and food pantry staff across the region and state through reports, presentations, and technical assistance to increase the effectiveness of the organizations and to better serve those accessing food pantries in rural Appalachia.

CHAPTER II: MANUSCRIPT

Abstract

Objective: To ascertain how food pantry users perceive their use of food pantries and how the food pantry fits into the broader scope of food acquisition among rural Appalachian households.

Design: Using a grounded theory approach, semi-structured interviews with food pantry users were conducted in-person and over-the-phone. Verbatim interview transcripts were uploaded into NVivo 11.4 software for thematic analysis and theory formulation. Demographic data were collected via survey.

Setting: Rural Appalachian food pantries.

Subjects: Participants (n=20) were predominately female (80%) and Caucasian (95%) with a mean age of 48 years (\pm SD= 13.4) with experience using food pantries in rural Appalachia.

Results: Food pantry users reported consistently acquiring food from the grocery store, food pantry, and family and friends. Reciprocal, informal, food-sharing networks were common. Factors such as lack of transportation, uncontrollable factors, and insufficient food quantity depleted food resources. Food stretching, refusing to waste food, using money-saving strategies, and the overall acceptability of food pantry food enhanced food resources. Food pantry users reported having to “make it work” when food resources were low.

Conclusions: Food pantries are a consistent food source for those who use them. Food pantry users are savvy with their resources and employ multiple strategies to maintain their food supply despite high levels of food insecurity. While most members in the sample were pleased with their food pantry experiences, areas remain to improve the food pantry experience while promoting adequate nutrition.

Keywords: food pantry, food insecurity, food acquisition, Appalachia, nutrition, dietary intake

Background

In 2016, over 12% of American households were classified as food insecure, meaning that at least one or more members of the household either reduced their food intake or had their eating patterns altered because the household did not have adequate money or resources to acquire sufficient food.¹⁵ Food insecurity and hunger are particularly problematic among rural populations. The prevalence of food insecurity in rural (nonmetropolitan) areas is 15.0%, a rate that is higher than metropolitan and suburban areas, which are 14.2% and 9.5%, respectively.¹⁵ A variety of factors contribute to this disparity including higher unemployment rates, lower educational levels, a greater concentration of jobs in low-wage industries, and reduced access to and availability of childcare services and transportation in rural areas as compared to metropolitan or suburban areas.¹⁸ Further, the prevalence of food insecurity is highest in the South (13.5%) compared to other regions in the United States (10.8%-12.2%).¹⁵

Individuals who experience food insecurity are more likely to suffer from higher rates of obesity, increased risk of developing chronic heart disease, diabetes, heart attack, hypertension, and stroke than those who are food secure.⁴⁻⁷ Those who experience food insecurity and hunger struggle to obtain adequate quantities of food to support their nutritional needs, which may lead reliance on foods from food assistance programs like food pantries. In 2014, 46.5 million Americans (15.1% of the population of the United States) relied on food from food pantries supported by the Feeding America Network of food banks, a number that includes 12 million children and 7 million seniors.¹³

Food pantry users are an important, yet understudied population, particularly those living in rural settings like Appalachia. The existing literature assesses typical dietary intakes of food pantry users^{12,19-24} and explores nutrition policies and barriers to distributing healthier food

among food banks and pantries from a managerial perspective.^{10,25} Common findings report that due to food banks' dependence on donations, highly processed, energy-dense snacks, high sodium canned items, and sugar-sweetened beverages are often staples at food pantries.²⁶ Studies have shown that food pantry users chronically under-consume fruits, vegetables, whole grains, dairy products, and essential vitamins and minerals, contributing to poor overall diet quality.^{20,21,23–25,27,28} It is important to understand the other sources of food in pantry users' diets as this can provide some insight into the role of the food pantry food parcel has in pantry client's food resources and diet quality.

In 2014 the Feeding America Network reported that 47% of food pantry users reported being in either fair or poor health with 58% of households reporting one member with hypertension and 33% reporting a household member with diabetes.¹³ These rates are markedly higher than the general US population as the prevalence of hypertension and diabetes is 29.1% and 9.4%, respectively.^{18,19} This disparity indicates that food pantry users may require foods from food pantries with nutritional profiles to prevent the worsening of chronic disease. While the available data on demographics, dietary intakes, and health of food pantry users are helpful and relevant, the current literature lacks the rich qualitative data from food pantry users about their perceptions of the food they receive at pantries as well as other places and types of food they obtain from sources other than pantries. This information is necessary to help food pantries better meet the specific needs of their clients as well as contribute to the development of acceptable nutritional policy.

Since food pantries are a critical point of food access among nutritionally compromised populations, they are an important resource for modeling and supporting healthful behaviors.⁵³ Pilot interventions using behavioral economics strategies, such as placing healthier items at eye-

level on shelves to encourage client selection, at food pantries have shown preliminary success, but little is known about food pantry users perceptions of their food acquisition experiences both within and outside of food pantries.^{36,47,48} Without an understanding of the perspectives and experiences of food pantry users, best practices and intervention points for promoting health and nutrition for this population remain unknown. The aims of this study were to gain understanding of perceptions and factors related to food assistance program usage among food pantry users and, in addition to food pantries, explore other food sources and food acquisition behaviors of food pantry users. By understanding how people who use food pantries in rural Appalachia acquire their food, potential strategies for improving promotion of health through food pantry services in vulnerable populations may be identified.

Methods

Recruitment and Participant Sample

Participant recruitment occurred primarily on-site at two food pantries in rural Appalachian communities. Interested participants were referred to the researcher by staff at the collaborating food pantries. Once referred, participants were screened for eligibility and informed consent was obtained. An additional six participants were recruited from an existing database generated from previous research studies conducted in rural Appalachian communities. Eligible participants from the database were called, screened and if eligible and interested in participating, mailed an informed consent statement to sign and return to the research team. Participants were eligible if they were over the age of 18 years at the time of the interview, had gotten food from a food pantry at least one time in the last year (including the day that recruitment occurred), and had the ability to speak English. The final sample included 20 food pantry users.

Data Collection

Data were collected in-person in a private room at the two food pantries or via phone by the researcher from September 2017 to March 2018. Interviews ranged from 19 to 66 minutes long with a mean interview time of 29.8 minutes (Standard Deviation (SD)= 10.7). Participants received a \$10 gift card upon completion of the interviews. Those who completed the interviews over the phone were mailed their gift cards within one week of interview completion.

A grounded theory approach to data collection and analysis was taken, as it best aligns with the aims of the research. Consistent with a grounded theory research, a semi-structured interview guide was used to both direct the interview and elicit comprehensive responses.⁵⁰ The interview guide was developed through an iterative process aimed to identify perceptions of food pantry usage and food acquisition behaviors among food pantry users. Deviance from the interview guide for probing was expected and allowed. Detailed field notes were recorded in a notebook directly upon interview completion. Field notes included the interviewer's initial perceptions about the topics discussed, any major themes or issues, a description of the interview location, participant attitudes, and tone of the interview including non-verbal cues if applicable.⁵⁴

A short quantitative survey based on tools previously used in low-income populations was administered as part of the interview to collect demographic information (age, sex, race, ethnicity, household income, and household size), and food acquisition information (payment method and physical location)⁵⁵. Self-reported anthropometric data, health history information (self-reported diagnosis of overweight or obesity, heart disease, high blood pressure, type 2 diabetes, and cancer), and food security status using the USDA 6-item screener was collected to get an understanding of the sample's general health status.⁵⁶ Survey questions asking about potentially sensitive information regarding health and food security status were placed at the end

of the interview to enhance participant comfort and rapport, and to reduce bias. Descriptive statistics were conducted on the quantitative data, and this information was used to describe the sample.

Data Analysis and Management

Interviews were audio recorded and transcribed verbatim to preserve emic terminology. Transcripts were uploaded to NVivo version 11.4 (QSR International, Melbourne, Australia), for analysis. Analysis was based on a grounded theory approach to ensure that major themes were supported by strong data.⁵⁰ Initial transcripts were open coded and the open codes were grouped into major themes. After verifying the themes with the transcripts, the research team used these axial codes to generate the first iteration of a codebook. The codebook was modified and expanded upon iteratively throughout the data analysis process. Each transcript was double-coded by both the primary investigator and a trained research assistant. During the coding process, a unit of text was defined as a complete thought (1-4 sentences) and data analysis allowed for the application of multiple codes to one unit of text. The research team met weekly for a period of 15 weeks to discuss emerging themes and resolve any discrepancies in thematic analysis to maintain systematic coding methods. Any discrepancies were discussed among the two coders and until an acceptable conclusion was reached. If a conclusion could not be reached, a neutral third party was consulted to make a final decision. An inter-rater agreement of 80% was reached by transcript five. However, the analysts continued to double code the remaining transcripts to enhance analyst triangulation. This allowed for the input of multiple perspectives into the coding process and generated a more comprehensive conclusion than that of a single analyst, thus enhancing transferability, credibility, and confirmability in the findings.^{57,58}

Consistent with a grounded theory approach, data collection and analysis occurred simultaneously to allow for constant improvement of data collection instruments. Once responses began to become redundant and no new information was obtained, signaling saturation, an additional three interviews were completed to confirm saturation.⁵⁹ Data collection was stopped upon confirmation of saturation at 20 interviews.

All study procedures were approved by the Institutional Review Board at the University of Tennessee, Knoxville (IRB number: UTK IRB-17-03801-XP). Collected data were securely protected to ensure participant confidentiality. Identifiable names and information were redacted from the transcripts and all data collection materials that contained identifiable information were kept separate from research data collected from participants.

Results

The sample was 80% female, aged 48 ± 13 years ($M \pm SD$), primarily self-identifying as non-Hispanic white (95%). Forty percent ($n=8$) of the sample had not completed high school, 40% ($n=8$) had a high school diploma or GED, and 20% ($n=4$) either had some college or a college degree. Ninety percent of the sample reported receiving Supplemental Nutrition Assistance Program (SNAP) benefits. The two participants who did not receive SNAP had either recently lost a job or had an income slightly above the income limits. Based on USDA classifications, 55% of households ($n=11$) were identified as having low food security, 40% ($n=8$) were identified as having very low food security, and 5% ($n=1$) were identified as having high food security. Body mass index (BMI) was calculated from self-reported height and weight. Eighty-five percent of the sample ($n=17$) were classified as overweight or obese ($BMI > 25$). Seventy percent of the sample reported having been diagnosed by a doctor or nurse with at least one of the following chronic diseases; overweight or obesity, heart disease, high blood pressure,

type 2 diabetes, or cancer. A full description of the sample may be found in Table 2.1 on the following page.

Primary Themes

Six primary themes emerged from the interviews including *major food procurement routes, emotional response to food pantry usage, resource sharing, factors enhancing food resources, factors depleting food resources, and having to 'make it work'*. Figure 1 brings the themes together into a conceptual framework, which depicts the relationships between major themes. Several sub-themes also emerged. Sub-themes and the conceptual framework are described in detail in the following sections.

A sub-analysis among those with minor children in the household (n=7) revealed an additional theme (not shown in Figure 1). This theme was characterized by parents and caregivers allowing their children to eat first and reducing their own portions to increase the amount of food provided to children.

Major Food Procurement Routes

Three major food procurement routes were identified from the interviews. Food pantry users indicated that they procured most of their food from the grocery store followed by food pantries and finally, through informal sharing networks with family and friends. All three routes were described as consistent sources of foods.

Food pantry users did not identify eating out at restaurants or fast food places as consistent food sources due to the perceived cost of prepared foods compared to staple foods that could be prepared by oneself:

'We just don't have it [money] to, you go to the fast food places, you spend \$10 before you're out the window and when you don't have that, your money is better placed getting milk and bread and eggs, you know – the staples.' (Female, 57 years)

Table 2.1. Demographic description of study sample (n=20).

Characteristic	Number	Percent
Age		
18-35	4	20.0
36-64	14	70.0
65+	2	10.0
Gender		
Female	16	80.0
Male	4	20.0
Racial/Ethnic Group		
White	19	95.0
Other	1	5.0
Education		
Less than high school diploma	8	40.0
High school diploma or GED	8	40.0
Some college or college degree	4	20.0
Employment Status		
Employed (full- or part-time)	1	5.0
Unemployed	5	25.0
Disabled	11	55.0
Retired	2	10.0
Average Monthly Income		
0-500	4	20.0
501-1,000	8	40.0
1,001-1,500	4	20.0
1,501+	4	20.0
Average Household Size		
1-3	13	65.0
4+	7	35.0
Average Dollar Amount Spent on Food per Month		
0-100	6	30.0
101-150	2	10.0
151-200	5	25.0
200+	7	35.0
Self-reported BMI		
18-24.9 (normal)	3	15.0
25-29.9 (overweight)	8	40.0
> 30 (obese)	9	45.0
Self-reported Diet-related Chronic Disease Status		
Overweight or obesity	5	25.0
Heart disease	4	20.0
High blood pressure	11	55.0
Type 2 diabetes	5	25.0
Cancer	2	10.0
Food Security Status		
High or marginal food security	1	5.0
Low food security	11	55.0
Very low food security	8	40.0

While a few participants indicated that they got foods from sources like commodity foods or their children participated in school meal programs, they suggested that these other sources contributed very minimally to their overall food resources. A combination of government food assistance programs such as SNAP benefits, money from disability or social security checks, and personal assets were used to purchase food from the grocery store. All three food sources (store, food pantry, family and friends) contributed to household food resources and food pantry users described combining foods from all three sources when preparing meals. Many participants indicated that food pantry foods often served a supplementary, yet critical, portion of their meals. However, foods received from the pantry were reported as insufficient in quantity to be used alone to create balanced meals with:

‘There’s a few of ‘em [food pantries] that’ll just give you a box of just cans and I’ll go home and tell my husband, ‘how do they think people can live on green beans and pinto beans and black beans and corn?’ You just can’t – it’s hard to live that way.’ (Female, 57 years)

Emotional Response to Food Pantry Usage

Speaking about reliance on food pantry usage elicited a variety of emotions among participants. Though some participants did not describe emotions related to food pantry use since using food pantries was just a normal part of their routine, others expressed embarrassment or shame for having to rely on food pantries for food:

‘Oh boy, that’s mixed feelings. I don’t really want to have to be here [at the food pantry] um, my husband doesn’t come very often – to men that’s an embarrassing thing, ya know. I love it when I’m here but the thought that I can’t go into the store and buy whatever I need for the week and people just fly in and out and get all the stuff, that’s hard. But you get past it. My kids don’t know I do this and I would never tell ‘em.’ (Female, 57 years)

‘Sometimes I get that feeling that you know, I’m just a bum. And you know, sometimes I mean, it doesn’t affect me, you know, I feel like I need this and this is what I have to do.’ (Male, 52 years)

Regardless of the emotions that using food pantries elicited, many food pantry users requested that they be treated as they would at the grocery store rather than needy people looking for food, often drawing on negative experiences at other food pantries:

'It's sort of a humiliating thing to have to go and get food from a place like that [a food pantry with judgmental staff]. To be looked at like you're the poorest of the poor or the peasants of the community – that's not fun.' (Female, 42 years)

Resource Sharing

The distribution of resources between social networks was discussed by all participants. Social networks, not to be confused with a website or application, were defined by participants as a combination of friends, family members, and neighbors. Sharing of resources across these social networks was cited as both normal and common. Participants often reported reciprocal food sharing where they provided food to, and received foods from family members and friends, especially during emergency situations:

'We also go to a food pantry if we need to, um, and if that doesn't help, we call a family member for help. It's usually my husband's mom and dad. They help us out a lot when, you know, when we need it. We help them out when they need it.' (Female, 31 years)

Further, food pantry users indicated that their decision to go to food pantries was often dependent on if they felt like they could get by until the next distribution to allow for people with greater need to use the food pantry. Participants described how they considered the needs of others within their social networks:

'I have people beside me, and this little lady I feel sorry for [her]. So, if I've got extra food when she's got four of five kids and herself, now I have [given her food], because you know there's just one of me, so I've done that.' (Female 1, 49 years)

'I mean, couple things [food items from the food pantry] you know, you might not like but you can always, you know, give to someone else you know who does like it or if not, you can always take it back and give it back to the church [food pantry] and they'll give it to someone else.' (Female 2, 49 years)

Among the households that had children, participants indicated that the adults in the household would ensure that the children had enough food before they ate. Additionally, it was important for adult members of the house to hide from their children that they often cut the size of their meals:

'You figure it up on top of all my bills and I get \$41 in food stamps a month. Who's going to come first? He's [my grandson] going to come first. I don't go hungry, I don't. You know, is there other foods I'd like to have? Oh yeah, sure. But I get his first and then I get mine.' (Female, 55 years)

Factors Enhancing Food Resources

Food Stretching and Avoiding Waste

Stretching food to make it last while refusing to waste foods from food pantries or other sources helped food pantry users maintain a supply of food resources and optimize the foods that they had, especially near the end of SNAP cycle when food resources were scarce. Food stretching was achieved through a variety of methods including incorporating canned vegetables or low-cost food items to meals, dividing large quantities of food into individual portions for later consumption, and/or freezing foods:

'You know we get a can like the beans. Or we might get corn that I'll make chili out of. You know, just odds and ends. I'll use beans, corn, peas, carrots, green beans, anything. I'll make a pot of chili with that stuff and that pot of chili that I make right there will be enough to where we can put some in the freezer. You know, and then it will make multiple meals from that. And so, you know, out of a pot of chili, I might be able to make it to where we may have four to six meals throughout the remainder of the month.' (Male, 52 years)

'We live a lot on potatoes. You can get potatoes really cheap and you can pretty much make a couple weeks work on what you have.' (Female, 40 years)

Money-Saving Strategies

In addition to stretching food, food pantry users reported employing multiple money-saving strategies to stretch their limited monetary resources like adhering to strict budgets, using

coupons, buying generic/store brands or low-cost foods, tracking sales, or going to multiple stores for the best deals:

'I try to get stuff that I can cook for myself. Like if you get hamburger meat and it's a deal, I get sandwich bags and try to put it in there. And then I have it when I need it when I'm just cooking for myself and so I look at that too. Sometimes it depends on if it's on sale' (Female 1, 49 years)

'It's that I already have some things stockpiled, um, and I mean some things you can't stockpile – like bread and milk—that's something you just have to buy. But, canned foods you can stockpile, toilet paper, stuff like that. When it's at a good price, I try to get as much as I can afford to get. And then, when we come to this time of year, usually I have enough things put away that we survive.' (Female, 42 years)

Acceptability of Food Pantry Food

Overall, food pantry users perceived the food they got from food pantries as both acceptable and useful, which enhanced their food resources because they felt like the food from the pantry was satisfactory. Food pantry users commonly said that the food they got from food pantries was no different from the foods they typically bought at the store with the exception of expiration dates, as food pantry food was more likely to be close to expiration when received:

'Well, they're [the foods given at the food pantry] usually no different. Because mostly what they give here, I've bought at the store. So actually, it's no different to me.'
(Female, 49 years)

'They have very good quality food here [the food pantry]. And like I said there is good usefulness on it because you get a little mixture of everything and aside from the bread getting moldy, everything's really pretty good.' (Female, 57 years)

Factors Depleting Food Resources

Lack of Transportation

Many factors influenced the amount of available food resources that food pantry users had, but transportation to and from food sources like the grocery store and the food pantry was consistently highlighted as a major barrier:

'No, I don't come every month... I didn't come last month. I needed to come, but I didn't have a way.' (Female 1, 49 years)

The major forms of transportation mentioned were either driving personal vehicles or getting rides with others who had vehicles. Just as informal sharing networks were identified as a food source among food pantry users, these networks were also identified as a source of transportation for some participants.

Uncontrollable Factors

A variety of uncontrollable factors including chronic diseases, disability status, restricted diets, the high price of food at the grocery store, especially for fresh meats, dairy, and produce, and lack of adequate benefits from government assistance programs were highlighted as barriers to being able to maintain enough food:

'I would never tell 'em [my kids that I use the food pantry]. They'd be 'mom, you need to get a job' but I can't, I have fibromyalgia and osteoarthritis and you can't, you have to work with your hands, and I can't.' (Female, 57 years)

'If it was the case that we are lazy, we don't want to work, you know, we don't want to be productive members of society - it would be so easy! But me and my husband both have college degrees and neither one [of us] can hold even a part time job because of medical things.' (Female, 42 years)

'And when it comes to the fruits and vegetables, they're, they're expensive sometimes so we just have to do without.' (Female, 31 years)

Insufficient Food Quantity

After stating that the food received from the pantry was generally acceptable, some participants mentioned that they would like to receive a larger quantity of food, especially fresh dairy and meat products, but they expressed understanding that food pantries were often limited by what types of food they could get from donations. Although the type of food pantry foods was

deemed as acceptable, food pantry users felt like they received an insufficient quantity of foods from food pantries and may benefit from an increased quantity and variety of foods:

'It's good. It really is. I'd say that the quality and everything is really good. Um the quantity you know could be upped a little bit maybe, but it's still good. Don't get me wrong, you know, I mean they're saying you can come one time in thirty days and you've got to stretch it if you want to make it thirty days on what they hand you but, it is possible.' (Male, 52 years)

'Um the quality...I'm not going to say it's 100 percent but it's really good. The last time I came, they had a lot of fresh, uh, fruits so we got a bunch of those. Um...see usually all of the food is really good because we end up eating everything that they give us. (Female, 31 years)'

'Food pantries, they actually really help you a lot. Especially when you need canned items and stuff like that. Just when you're completely out and don't have nothing else to eat on. I mean it does give you something at least to eat.' (Female, 26 years)

Having to 'Make it Work'

During times when food resources were depleted, food pantry users indicated that they adapted to 'make it work' on what they had, even if it meant skipping meals or only eating snack foods for the day:

'I tough it out pretty much. But what I get usually will last, you know I said that I don't eat that much, so what I get at the grocery store I try to get things that, that will last me through the month. And I've been doing this a while, so I pretty much got it out to where I don't run out of food much. It's pretty seldom, you know. Uh these times I do run out of certain things like bread, milk, and I just make it happen. I just make it work.' (Male, 52 years)

'When it comes down to it, then we just, like, provide ourselves with, you know, we do with what we can if it's here and if we have to cut down to like one meal a day, then that's what we do.' (Female, 40 years)

'Sometimes I don't eat. I go back and get the big bag of Froot Loops if I get hungry I'll snack on that and I'm okay. You know, I ain't got no reason to lie to you, it's hard, it's hard.' (Female, 55 years)

Some participants addressed nutrition, but indicated that eating healthy was expensive and difficult, making it unobtainable, especially with their limited monetary and food resources:

'It's frustrating for us because, you know, we do want to be healthy and we want our kids to be healthy and we do care about that [nutrition] and we can't get any help at all. We can't get anything.' (Female, 42 years)

'It's hard when you're living on Social Security because you just don't have [enough]. You know, they say eat healthy do this, buy this, do that – you can't when your money is limited so you just make what you have to with whatever's in the fridge and you go from there.' (Female, 57 years)

Conceptual Framework

Figure 2.1, shown on the following page, was created using themes identified during data analysis by the research team to depict how major themes interact to describe the food pantry user's food acquisition experience. The top portion of the framework shows the three major food procurement routes used by food pantry users to contribute to their overall food resources; the grocery store, food pantry, and a person's social network. The size of the arrows indicates the volume of food that is obtained from each source. Personal monetary assets and use of government food assistance programs such as SNAP are used to purchase food from the grocery store. The emotional response elicited by using food pantries is represented alongside the arrow pointing to food resources from the food pantry. A person's social network varies, but is often comprised of a combination of friends, neighbors, and family. The arrow connecting social network and food resources is bidirectional to represent the reciprocal relationship of food resource sharing between a food pantry user and their social network.

The bottom portion of the framework lists factors that both deplete (bottom left) and enhance (bottom right) food resources. The direction of the arrows indicates whether the factor either increases (by pointing toward the food resources box) or decreases (by pointing away from the food resources box) food resources. The arrows on either side of the central food resources box highlight food availability. When more food is available, food pantry users are likely to

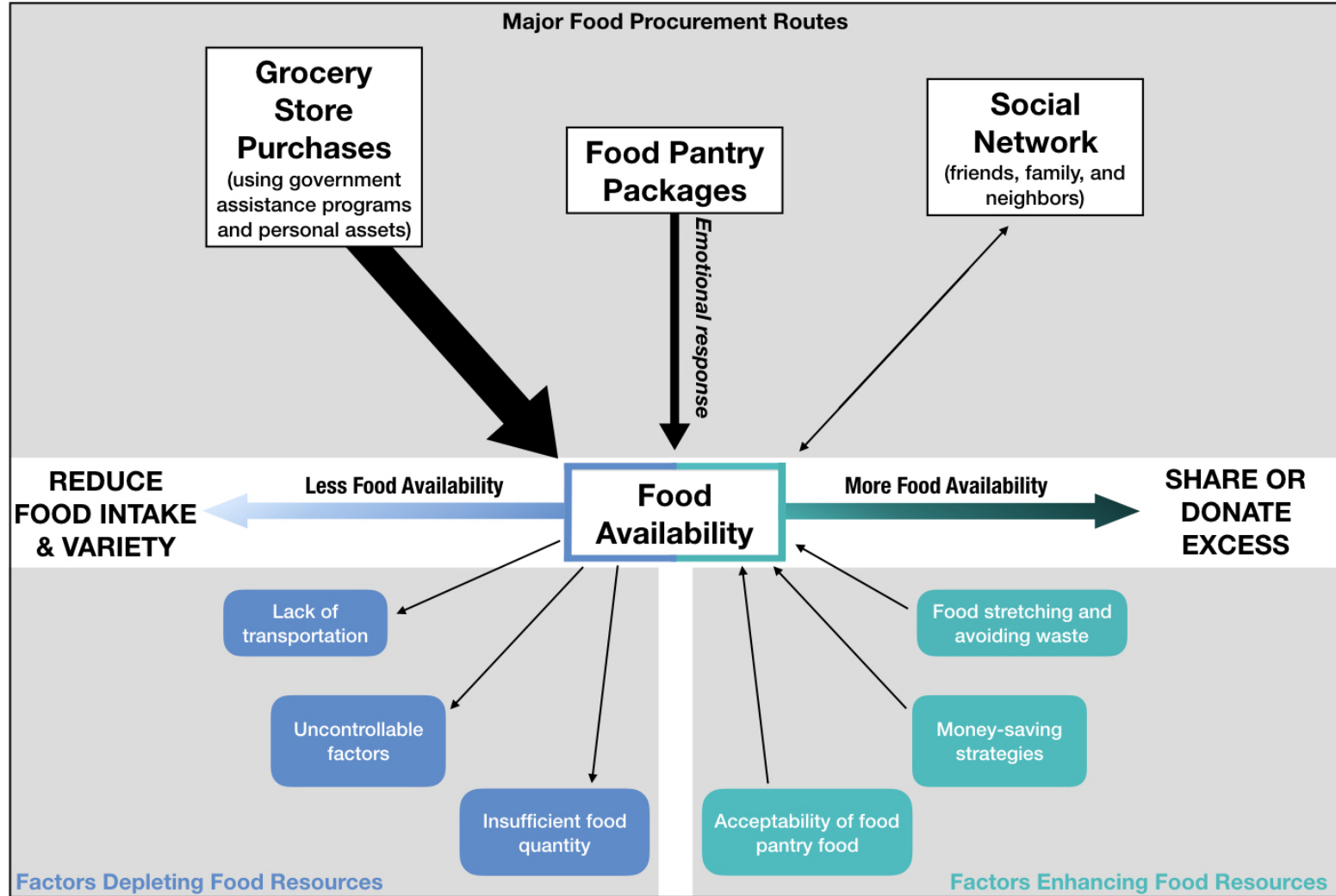


Figure 2.1. Food acquisition behaviors, barriers, and enhancers among food pantry users: a conceptual framework.

share their excess food with others in their social network or donate it back to the food pantry, while when less food is available, food pantry users just ‘make it work’ with what they have by reducing food intake and variety.

Discussion

Despite low food security status, food pantry users are exceptionally savvy with their resources and employ numerous methods for dealing with chronic food insecurity. Food stretching, refusing to waste food, reciprocal sharing networks, and money-saving strategies help food pantry users survive on the foods that are available to them. However, constraints like poor financial health, disability and chronic disease, low food security status, and lack of transportation to access vital services compound and make it difficult for low-income households to prioritize health and nutrition. The chronic disease that often results from a stress and a poor diet further exacerbates the need for a healthy diet and increases healthcare costs, creating a cycle of poverty among low income households.^{42,60,61} Although poverty rates in the US fluctuate, the Appalachian region has been characterized as persistently economically depressed.^{61,62}

Food pantry foods are very important to those who access them because rather than acting as an emergency food source, as is generally the intent of these organizations, food pantries have been identified instead as a consistent food source in both the current study and previous research.^{63,64} Even with consistent food pantry use, participants in our sample were still classified as having a low food security status. The constant burden of food insecurity felt by low-income families highlights the need to shape the food pantry environment into one that promotes multiple social service and health resources. By creating healthy food pantry environments, food pantries can help promote health and nutrition among their clients without

placing the responsibility to prioritize health and nutrition on individuals who already deal with tremendous stressors related to poverty.^{34,53} However, since participants in our sample were generally pleased with their food pantry experience, health-focused changes to the food pantry environment should require sufficient consideration. For example, it has been found that food pantry users chronically under consume dairy and calcium, so providing more fresh dairy products, as requested by participants in the current study would likely be an acceptable change to the food pantry environment.^{12,19,21} Additionally, using behavioral economics strategies and healthy nudges (i.e. placing healthy items at eye-level in self-selection food pantry models) are potential techniques to encourage healthier food selection at food pantries without burdening food pantry users.^{35,36,53}

A variety of barriers prevent food pantries from providing more nutritious, culturally appropriate foods including a lack of nutrition policy guiding donations and insufficient time, resources, and knowledge.^{10,35,36} Yet, various nutrition initiatives and programs, such as those discussed by Campbell and colleagues have been developed to help food banks and pantries procure and distribute more nutritious foods to their clients.^{25,26,65} Results from a novel food pantry model in Connecticut found that addressing root causes of poverty and providing counseling services along with fresh foods was effective in increasing food security status, building self-efficacy, and modestly increasing fruit and vegetable intake among participants when compared to a control group accessing a typical food pantry.^{47,48} This indicates that food pantries can be a force to not only increase food security status, but to improve the health of those who access it. However, modifications to food pantry distribution styles should be region specific since metropolitan and nonmetropolitan food pantry users may require different foods and have varying abilities to prepare food pantry foods.

Lack of transportation as a barrier to food access, while not a new concept in rural areas, is a possible point of intervention for food pantries in rural communities, especially since rural areas typically lack public transportation routes.^{18,66–68} Our finding that transportation often prevents individuals from benefiting from the services provided at food pantries indicates that food pantries in rural areas may need to either offer transportation services to their clients or develop strategies to bring food pantry services to their clients. For example, co-locating food pantries in places where people already go regularly, such as clinics serving rural populations, schools, and churches is potential strategy to reduce issues related to lack of transportation. For existing pantries, the feasibility of creating mobile food pantries, providing transportation for food pantry users, or implementing a delivery system should be explored to allow food pantries to reach those who need food the most. Additionally, coordinating the services provided at food pantries with other food assistance programs, like providing opportunities for enrollment into SNAP, may be another potential solution to address transportation limitations that prevent food pantry usage.

Finally, emotions surrounding food pantry usage expressed by participants are an important consideration for public health professionals working with the food pantry-using population. While some food pantry users were seemingly unaffected by requiring assistance from food pantries, others felt ashamed or embarrassed by having to rely on food pantries for food. However, all requested that they be treated with respect and dignity. The following quote highlights the important role that food pantries play in the lives of food pantry users:

*‘You know, most people who go to the pantries are not looking for that free handout. It’s just they’re in a position where they don’t have a choice. It’s either do that or starve.’
(Male, 52 years)*

This research has several important strengths. One major strength of this research was involving two researchers in the data analysis process, which allowed the input of multiple perspectives to generate a more comprehensive conclusion than that of a single analyst.^{57,58} Further, data analysis methods to ensure trustworthiness of the findings, focusing on enhancing transferability, dependability, confirmability, and credibility of the findings were used.⁵⁷ Other strengths of the research included addressing a research gap and working with a unique food pantry-using population in rural Appalachia.

Limitations of the study must also be acknowledged. These included the exclusion of non-English speakers, which had the potential to affect representation of vulnerable groups within the food pantry-using population. As with any qualitative research study, the researcher likely had an influence on the results.⁶⁹ Although steps to limit researcher influence on the results were taken, it is important to acknowledge the potential impact of researcher bias.

Conclusion

This research improves our understanding of food acquisition behaviors and perceptions of food pantry use among food pantry users in rural Appalachia. Food pantries were identified as important and consistent food sources and food pantry foods were used strategically in combination with foods procured from both grocery stores and social networks. While food pantry users were generally pleased with their food pantry experience, areas of improvement were identified, such as increasing the quantity of food given and frequency of distribution, providing more fresh dairy and meat products, and potentially providing transportation to and from food pantries. More research that can be generalized to other food pantry-using populations is needed to understand how food pantries can best serve their clients while addressing the high rates of chronic diseases experienced by food pantry users.

CHAPTER III: EXPANDED METHODS

Undergraduate Research Assistant

An undergraduate research assistant (URA) was recruited to help with transcription and data analysis. A request for interested students was sent via email to the undergraduate nutrition listserv in July 2017. The email included a position description, time requirements (approximately 10 hours/week), and characteristics sought in the URA including self-motivation, attention to detail, strong communication skills, and adherence to deadlines. Email responses were screened, and an initial meeting was set with the best applicant.

Prior to the initial meeting, the URA was given the thesis proposal document to review. The initial meeting served to further orient the URA to the aims of the research project, qualitative research methodology, and describe responsibilities. During the meeting, the graduate student researcher provided an oral description of the study, similar to the thesis proposal presentation, highlighting the tasks to be assigned to the URA. The URA was allowed to ask any questions about the study.

After the initial meeting, the URA was sent the following resources to serve as a follow-up to the introduction to qualitative research that she received during the meeting: RWJF's Qualitative Research Guidelines Project (<http://www.qualres.org/HomeGuid-3868.html>), Johns Hopkins Department of International Health: Training in Qualitative Research Methods (http://www.jhsph.edu/research/centers-and-institutes/center-for-refugee-and-disaster-response/publications_tools/publications/qualresearch.html#download). Since the URA had previous research experience, she was familiar with the requirements of research involving human subjects and was asked to send verification of her completion of the Collaborative Institutional Training Initiative (CITI) training modules in social and behavioral sciences. Once CITI training verification was obtained, the URA was added to the IRB for the study.

URA Training Related to Transcription

The URA was introduced to transcription by first reviewing a sample transcript and discussing the transcription process with the graduate student researcher. The format of the sample transcript was identical to the format that was used for the study. The sample transcript was described by its main components, the file naming schema, and use of standardized terminology. The graduate student researcher created a transcript ‘key’ that delineated abbreviations to be used when transcribing. All transcripts completed by the URA were reviewed by the graduate student researcher and transcription errors were fixed and discussed with the URA.

URA Training Related to Data Analysis

The data analysis training process began with a joint identification of a transcript with very rich data by the URA and the graduate student researcher. This rich transcript was used to do initial open coding, which is the process of dissecting the text line-by-line to determine the topic about which the participant was talking. Both the URA and the graduate student researcher open coded the same text. After both completed the open coding, the graduate student researcher and the URA met to discuss the results and identify any discrepancies. All discrepancies in coding were addressed and resolved.

Open codes were grouped into larger themes that were used to develop a codebook. The codebook was applied to all transcripts by both the graduate student researcher and URA. The graduate student researcher and the URA met weekly to discuss emerging themes, address possible issues with coding, make changes or additions to the codebook, and tweak the interview guide.

The URA was trained on using NVivo11 software to code by the graduate student researcher. The graduate student researcher had previously attended both an NVivo11 training workshop offered by the Office of Information Technology (OIT) and a one-on-one session with an OIT staff member. Materials obtained from both training sessions were used to familiarize the URA with NVivo software.

Study Materials

The recruitment poster (Appendix A), informed consent statement (Appendix B), and interview guide (Appendix C) as mentioned in the study methods portion of the manuscript are included as appendices. The recruitment poster was brought to the food pantry for recruitment, but most participants were referred to the researcher by food pantry staff.

REFERENCES

1. United States Department of Agriculture Economic Research Service. Food Security in the U.S. Measurement. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us.aspx>. Published 2016. Accessed April 4, 2017.
2. Mark S, Lambert M, O'Loughlin J, Gray-Donald K. Household income, food insecurity and nutrition in Canadian youth. *Can Journ Public Heal*. 2012;103(2):94-99.
3. Egeland GM, Johnson-Down L, Cao ZR, Sheikh N, Weiler H. Food insecurity and nutrition transition combine to affect nutrient intakes in Canadian arctic communities. *J Nutr*. 2011;141(9):1746-1753. doi:10.3945/jn.111.139006.
4. Seligman HK, Bindman AB, Vittinghoff E, Kanaya AM, Kushel MB. Food insecurity is associated with diabetes mellitus: results from the National Health Examination and Nutrition Examination Survey (NHANES) 1999-2002. *J Gen Intern Med*. 2007;22(7):1018-1023. doi:10.1007/s11606-007-0192-6.
5. Seligman HK, Laraia B a, Kushel MB. Food insecurity is associated with chronic disease among low-income NHANES participants. *J Nutr*. 2009;140(May):304-310. doi:10.3945/jn.109.112573.number.
6. Venci BJ, Lee SY. Functional limitation and chronic diseases are associated with food insecurity among U.S. adults. *Ann Epidemiol*. 2018;28(3):182-188. doi:10.1016/j.annepidem.2018.01.005.
7. Kaiser ML, Cafer A. Understanding high incidence of severe obesity and very low food security in food pantry clients: implications for social work. *Soc Work Public Health*. 2018;33(2):125-139. doi:10.1080/19371918.2017.1415181.
8. Casey P, Goolsby S, Berkowitz C, et al. Maternal depression, changing public assistance, food security, and child health status. *Pediatrics*. 2004;113(2):298-304.
9. Jyoti DF, Frongillo EA, Jones SJ. Food insecurity affects school children's academic performance, weight gain, and social skills. *J Nutr*. 2005;135:2831-2839.
10. Campbell EC, Ross M, Webb KL. Improving the nutritional quality of emergency food: a study of food bank organizational culture, capacity and practices. *J Hunger Environ Nutr*. 2013;8(3):261-280. doi:10.1080/19320248.2013.816991.
11. What is a Food Bank? Feeding America. <http://www.feedingamerica.org/about-us/how-we-work/food-bank-network/what-is-a-food-bank.html>. Published 2017.
12. Starkey LJ, Gray-Donald K, Kuhnlein H V. Nutrient intake of food bank users is related to frequency of food bank use, household size, smoking, education and country of birth. *J Nutr*. 1999;129(4):883-889.
13. Borger C, Kinne A, O'Leary M, et al. *Hunger in America 2014: Executive Summary*. Rockville, MD; 2014. <http://www.feedingamerica.org/hunger-in-america/our-research/hunger-in-america/>. Accessed April 7, 2017.
14. Second Harvest Food Bank of East Tennessee. About Us. <https://secondharvestetn.org/about-us/>. Published 2015. Accessed April 7, 2017.
15. Coleman-Jensen A, Rabbitt MP, Gregory CA, Singh A. Household Food Security in the United States in 2016. USDA Economic Research Service. <https://www.ers.usda.gov/webdocs/publications/err215/err-215.pdf>. Published 2017. Accessed October 30, 2017.
16. U.S. Department of Commerce. Census regions and divisions of the United States. 2013:1-2. https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf.
17. Appalachian Regional Commission. The Appalachian Region.

- https://www.arc.gov/appalachian_region/TheAppalachianRegion.asp. Published 2017. Accessed October 29, 2017.
18. Feeding America. *Rural Hunger Fact Sheet*.; 2017.
 19. Lenhart NM, Read MH. Demographic profile and nutrient intake assessment of individuals using emergency food programs. *J Am Diet Assoc*. 1989;89(9):1269-1272.
 20. Duffy P, Zizza C, Jacoby J, Tayie FA. Diet quality is low among female food pantry clients in Eastern Alabama. *J Nutr Educ Behav*. 2009;41(6):414-419. doi:10.1016/j.jneb.2008.09.002.
 21. Miller C. Got milk? Food insecurity in a dairyland community. *J Hunger Environ Nutr*. 2011;6(3):343-352. doi:10.1080/19320248.2011.597835.
 22. Crawford PB, Webb KL. Unraveling the paradox of concurrent food insecurity and obesity. *Am J Prev Med*. 2011;40(2):274-275. doi:10.1016/j.amepre.2010.11.003.
 23. Holben DH. Food bank users in and around the lower mainland of British Columbia, Canada, are characterized by food insecurity and poor produce intake. *J Hunger Environ Nutr*. 2012;7(4):449-458. doi:10.1080/19320248.2012.732925.
 24. Depa J, Hilzendegen C, Tinnemann P, Stroebele-Benschop N. An explorative cross-sectional study examining self-reported health and nutritional status of disadvantaged people using food banks in Germany. *Int J Equity Health*. 2015;141(14). doi:10.1186/s12939-015-0276-6.
 25. Handforth B, Hennink M, Schwartz MB. A qualitative study of nutrition-based initiatives at selected food banks in the Feeding America Network. *J Acad Nutr Diet*. 2013;113(3):411-415. doi:10.1016/j.jand.2012.11.001.
 26. Simmet A, Depa J, Tinnemann P, Stroebele-Benschop N. The nutritional quality of food provided from food pantries: a systematic review of existing literature. *J Acad Nutr Diet*. 2016:39-41. doi:10.1016/j.jand.2016.08.015.
 27. Crawford B, Yamazaki R, Franke E, Amanatidis S, Ravulo J, Torvaldsen S. Is something better than nothing? Food insecurity and eating patterns of young people experiencing homelessness. *Aust N Z J Public Health*. 2015;39(4):350-354. doi:10.1111/1753-6405.12371.
 28. Neter JE, Dijkstra SC, Visser M, Brouwer IA. Dutch food bank parcels do not meet nutritional guidelines for a healthy diet. *Br J Nutr*. 2016:526-533. doi:10.1017/S0007114516002087.
 29. Weinfield NS, Mills G, Borger C, et al. *Hunger in America 2014*.; 2014. <http://www.feedingamerica.org/hunger-in-america/our-research/hunger-in-america/>.
 30. Centers for Disease Control and Prevention. *National Diabetes Statistics Report , 2017 Estimates of Diabetes and Its Burden in the United States*.; 2017.
 31. Nwankwo T, Sug S, Yoon S, et al. *Hypertension Among Adults in the United States : National Health and Nutrition Examination Survey, 2011 – 2012*.; 2013.
 32. Robaina KA, Martin KS. Food insecurity, poor diet quality, and obesity among food pantry participants in Hartford, CT. *J Nutr Educ Behav*. 2013;45(2):159-164. doi:10.1016/j.jneb.2012.07.001.
 33. Centers for Disease Control and Prevention. General food environment resources. <https://www.cdc.gov/healthyplaces/healthtopics/healthyfood/general.htm>. Published 2014.
 34. Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating healthy food and eating environments: policy and environmental approaches. *Annu Rev Public Health*.

- 2008;29(1):253-272. doi:10.1146/annurev.publhealth.29.020907.090926.
35. Wison N. When the cupboards are bare: nudging food pantry clients to healthier foods. *J Am Coll Radiol*. 2016;1(1):125-133. doi:10.1007/s10551-015-2769-z.For.
36. Feeding America. The power of nudges: making the healthy choice the easy choice in food pantries. 2016. http://hungerandhealth.feedingamerica.org/wp-content/uploads/legacy/mp/files/tool_and_resources/files/fea-16-002-fea-nudgesreport-final.pdf.
37. Appelhans BM, French SA, Tangney CC, Powell LM, Wang Y. To what extent do food purchases reflect shoppers' diet quality and nutrient intake? *Int J Behav Nutr Phys Act*. 2017;14(1):1-10. doi:10.1186/s12966-017-0502-2.
38. Ransley JK, Donnelly JK, Botham H, Khara TN, Greenwood DC, Cade JE. Use of supermarket receipts to estimate energy and fat content of food purchased by lean and overweight families. *Appetite*. 2003;41(2):141-148. doi:10.1016/S0195-6663(03)00051-5.
39. Eyles H, Jiang Y, Ni Mhurchu C. Use of household supermarket sales data to estimate nutrient intakes: a comparison with repeat 24-hour dietary recalls. *J Am Diet Assoc*. 2010;110(1):106-110. doi:10.1016/j.jada.2009.10.005.
40. United States Department of Agriculture Center for Nutrition Policy and Promotion. Healthy Eating Index (HEI). <https://www.cnpp.usda.gov/healthyeatingindex>. Published 2013. Accessed February 25, 2017.
41. United States Department of Agriculture Choose My Plate. Dietary Guidelines for Americans 2015-2020. <https://www.choosemyplate.gov/dietary-guidelines>. Published 2016. Accessed November 3, 2017.
42. World Health Organization. *Diet, Nutrition, and the Prevention of Chronic Diseases. Report of a WHO Study Group*. WHO Techni. Geneva; 2003.
43. Basiotis P, Carlson A, Gerrior S, Juan W, Lino M. The Healthy Eating Index, 1999-2000: charting dietary patterns of Americans. *Fam Econ Nutr Rev*. 2004;16(1):1999-2000.
44. Feeding America. Hunger + Health. <https://hungerandhealth.feedingamerica.org>. Published 2018. Accessed April 4, 2018.
45. Avery W, Brennan M, Casey M, et al. Freshplace manual: a resource guide for an innovative food pantry model. 2014:1-95.
46. Martin K, Shuckerow M, O'Rourke C, Schmitz A. Changing the conversation about hunger: the process of developing Freshplace. *Prog Community Heal Partnerships Res Educ Action*. 2012;6(4):429-434. doi:10.1353/cpr.2012.0056.
47. Martin KS, Wu R, Wolff M, Colantonio AG, Grady J. A novel food pantry program: Food security, self-sufficiency, and diet-quality outcomes. *Am J Prev Med*. 2013;45(5):569-575. doi:10.1016/j.amepre.2013.06.012.
48. Martin KS, Colantonio AG, Picho K, Boyle KE. Self-efficacy is associated with increased food security in novel food pantry program. *SSM - Popul Heal*. 2016;2:62-67. doi:10.1016/j.ssmph.2016.01.005.
49. Creswell JW. *Qualitative Inquiry and Research Design: Choosing among Five Traditions*. Thousand Oaks: Sage Publications, Inc.; 1998.
50. Strauss AL, Corbin JM. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Second Edi. Thousand Oaks: Sage Publications, Inc.; 1998.
51. Morse JM, Field PA. *Qualitative Research Methods for Health Professionals*. Second Edi. Thousand Oaks: Sage Publications, Inc.; 1995.

52. Starks H, Brown Trinidad S. Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory. *Qual Health Res.* 2007;17(10):1372-1380. doi:0.1177/1049732307307031.
53. Byker Shanks C. Promoting food pantry environments that encourage nutritious eating behaviors. *J Acad Nutr Diet.* 2017;117(4):523-525. doi:10.1016/j.jand.2016.12.020.
54. Taylor SJ, Bogdan R, DeVault M. *Introduction to Qualitative Research Methods: A Guidebook and Resource.* Fourth Edi. John Wiley & Sons; 2015.
55. Askew T. *In Perspective: An Assessment of Milwaukee County Food Pantry Clients.* Milwaukee; 2010. http://hungercenter.wpengine.netdna-cdn.com/wp-content/uploads/2011/06/In-Perspective_An-Assessment-of-Milwaukee-County-Food-Pantry-Clients-Askew.pdf.
56. USDA Economic Research Service. Six-Item Short Form of the Food Security Survey Module. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools/#six>. Published 2017. Accessed April 26, 2017.
57. Johnson Foundation RW. Lincoln and Guba's Evaluative Criteria. Qualitative Research Guidelines Project. <http://www.qualres.org/HomeLinc-3684.html>. Published 2008. Accessed April 28, 2017.
58. Carter N, Bryant-Lukosius D, DiCenso A, Blythe J, Neville AJ. The use of triangulation in qualitative research. *Oncol Nurs Forum.* 2014;41(5):545-547. doi:10.1188/14.ONF.545-547.
59. Fusch PI, Ness LR. Are we there yet? Data saturation in qualitative research. *Qual Rep.* 2015;20(9):1408-1416.
60. Gerteis J, Izrael D, Deitz D, et al. *Multiple Chronic Conditions Chartbook.* Rockville, MD; 2014.
61. Iceland J. *Poverty In America: A Handbook.* University of California Press <https://ebookcentral-proquest-com.proxy.lib.utk.edu:2050/lib/utk/reader.action?docID=1294909&query=>.
62. Bishaw A. *Poverty: 2009 and 2010.*; 2011.
63. Tarasuk V, Dachner N, Loopstra R. Food banks, welfare, and food insecurity in Canada. *Br Food J.* 2014;116(9):1405-1417. doi:10.1108/BFJ-02-2014-0077.
64. Poppendieck J. Dilemmas of emergency food: a guide for the perplexed. *Agric Human Values.* 1994;11(4):69-76. doi:10.1007/BF01530418.
65. MAZON. Nutrition in the Charitable Food System. <https://mazon.org/what-we-do/our-initiatives/nutrition-in-the-charitable-food-system>.
66. Garasky S, Morton LW, Greder K a, Morton LW. The food environment and food insecurity: perceptions of rural, suburban, and urban food pantry clients in Iowa. *Hum Dev Fam Stud Digit Repos Iowa State Univ.* 2004;16(2):41-48. http://lib.dr.iastate.edu/hdfs_pubs/5.
67. Charlton M, Schlichting J, Chioreso C, Ward M, Vikas P. Challenges of rural cancer care in the United States. *Oncology (Williston Park).* 2015;29(9):633-640. doi:213346 [pii].
68. Garasky S, Morton LW, Greder K. The food environment and food insecurity: perceptions of rural, suburban, and urban food pantry clients in Iowa. *Fam Econ Nutr Rev.* 2004;16(2):41-48.
69. Zhang Y, Wildemuth BM. Qualitative analysis of content. 2005;1(2):1-12. doi:10.1002/hbm.20661.

APPENDICES



Appendix B: Informed Consent Statement

Informed Consent Statement

Perceptions of Food Pantry Usage and Food Acquisition Behaviors among Food Pantry Users in East Tennessee

INTRODUCTION

You are being invited to participate in a research study conducted by the University of Tennessee Department of Nutrition. All research studies being conducted by the University of Tennessee adhere to the rules specified by University, State and Federal governments. According to these rules, the researcher will describe the current study and then you will be asked to participate. If you agree to participate, you will be asked to sign this agreement, which says that the study has been explained, any questions you may ask have been answered, and that you agree to participate in the study. All expectations will be clearly explained by the researcher and you will be made aware of the purpose of the study.

All possible risks and potential benefits from participating in the study will be explained. You may ask the researcher any questions before you decide if you would like to be involved in the study. If you decide that you will participate after you have been made aware of all consequences of participation, please sign and date this form in front of the researcher, giving your informed consent. You will be given a copy of this form for your records.

You are being invited to participate in this study because you have experience using food pantries in East Tennessee. Your experience has given you valuable knowledge about ways that you provide food for yourself and any possible dependents. Your unique insight could be very beneficial to understanding the role of the food pantry in overall food procurement.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

After agreeing to participate in this study, you will be interviewed about some general information about yourself, including your birthday, gender, race, ethnicity, educational level, employment, income, and different ways that you get food and you will be asked questions about your opinions about food pantry usage, food preferences, and food shopping habits. Questions will focus on your specific experiences. There are no right or wrong answers, we are just trying to understand your point of view. The interview will either be conducted on site at the food pantry or over-the-phone at a time that is convenient to you.

For research purposes, each interview will be recorded using an electronic recording device so that it may be transcribed accurately. Both in-person and phone interviews will be recorded.

You will not be identified in any way during the interview and all collected information will be kept confidential. The information we collect from you will either be stored in locked file cabinets at the University of Tennessee or on a password-protected computer. Documents that contain your information will be destroyed after review or within two years of completion of the study, whichever comes first. The entire process is expected to take approximately 30 minutes and you will receive a \$10 gift card to a local grocery store in appreciation for your time.

RISKS

There is little foreseeable risk associated with participating in this study other than those encountered in everyday life. We may ask you a question that you are uncomfortable with answering. If that is the case, you can simply skip the question and move on to the next question.

BENEFITS

There are no direct benefits for you, but your participation will provide important information about perceptions of food pantry usage and patterns of food purchasing that may help enhance services provided by food pantries in East Tennessee.

CONFIDENTIALITY

All information in the study records will be kept confidential. Any files or transcripts with your name on them will not be linked to your personal information or the food pantry that you use. Consent forms will not be associated with their corresponding transcripts and these documents will be stored separately. Any and all identifiable information in the transcript will be removed. All data will be stored securely and will be made available only to qualified persons conducting the study. Files will be locked in filing cabinets in room 202 of the Jessie Harris Building at the University of Tennessee and electronic data will be stored on a password-protected server managed by the University of Tennessee. All procedures used to protect confidentiality will be approved by the Institutional Review Board at the University of Tennessee.

COMPENSATION

We appreciate your participation in this study. Upon completion of the interview, you will receive a \$10 gift card to a local retailer in appreciation for your time. In-person participants will receive the gift card after completing the interview and phone interview participants will be mailed the gift card no later than one week after the completion of the interview. Participants who withdraw from the study prior to completion will not receive compensation.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, you may contact the researcher, Adeline Grier-Welch, at healthe@utk.edu or (865) 974-6258 or her advisor, Dr. Elizabeth Anderson Steeves, at eander24@utk.edu or (865) 974-7697. If you have questions about your rights as a participant, you may contact the University of Tennessee IRB Compliance Officer at utkirb@utk.edu or (865) 974-7697.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be kept and used if possible. You may ask questions at any point during the study.

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's Name (printed) _____

Participant's Signature _____ Date _____

Appendix C: Interview Guide

Interview Guide for Food Pantry Users

Interviewer Name: _____

Participant ID: _____

Date: _____ Start time: _____ End time: _____

Location: _____ ☐ In-person ☐ Over-the-phone

Notes: _____

Section 1– Demographics

- [illegible]

9. In the last 30 days, how many children (ages 17 years old or younger) were living in your household? Check one.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Other: _____

Section 2 – Emergency Food Assistance Usage

10. Check ALL the ways you and your household will get food this month:

- | | |
|--|--|
| <input type="checkbox"/> Using SNAP benefits | <input type="checkbox"/> Paying with cash/debit cards |
| <input type="checkbox"/> Using WIC benefits | <input type="checkbox"/> Paying with a credit card |
| <input type="checkbox"/> Free or reduced-price school lunch | <input type="checkbox"/> Free or reduced-price breakfast |
| <input type="checkbox"/> Free from a food pantry | <input type="checkbox"/> Given from family and friends |
| <input type="checkbox"/> Traded for other goods and services | <input type="checkbox"/> Community schools (grab-n-go meals) |
| <input type="checkbox"/> Afterschool programs | <input type="checkbox"/> Backpack program (school or church) |
| <input type="checkbox"/> Commodity Foods | <input type="checkbox"/> Meals on Wheels/Mobile Meals |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> Other: _____ |

11. What is the average dollar amount you are able to spend on food in a month, including Food Stamps and/or WIC benefits?

☐ \$0-\$50 ☐ \$51-\$100 ☐ \$101-\$150 ☐ \$151-\$200 ☐ more than \$200

12. If you receive SNAP, how much extra of your own money do you spend on food in a month?

☐ \$0-\$50 ☐ \$51-\$100 ☐ \$101-\$150 ☐ \$151-\$200 ☐ more than \$200

Interview Section

Thank you. Now we'll get started with the interview. Do you have any questions before we start?

[TURN ON RECORDER]

Your familiarity with getting food for yourself and your household has given you valuable knowledge and I want to learn about your experiences.

Food Pantry Perception/Food Acquisition Behavior Questions

First, I'd like to ask you some questions about all the people you usually provide food for in a month, this can include people in your household, people in your family, and friends.

- Can you please describe all the people you get food for in a month?
 - [Probe] for household members versus non-household members and relationships
- What are some of your family or household's favorite foods and beverages?

Now, I'd like to ask you about all the places that you get food.

- First, will you please describe for me all the places you buy/get food?
 - [Probe] for all places including grocery stores, convenience stores, pharmacy stores, pantries, restaurants, church, from family and/or friends
 - [Probe] for where they get the majority of their food
 - [Probe] for if their children get food from school or other sources
 - [Probe] for frequency of store visits or use of coupons/lists
- What are the reasons you go to those places/stores versus other places?
- What types of food do you get from these places?
- How do you choose what foods/drinks to get at these places?
 - [Probe] for influencers that affect food and drink choices (price, taste, health, etc.)
- During the times that it is hard to get enough food, how do you make ends meet each month?
 - [Probe] for programs used and other enabling factors/barriers encountered
- How different is the food you get from the food pantry than the types of food you would usually buy at the grocery store?
 - [Probe] for influencers that affect food and drink choices (price, taste, health, etc.)
 - [Probe] for the cultural and geographical relevance of the food they get
 - What other foods or drinks do you wish you could get more of but can't? What makes it challenging for you to get more of those foods/drinks?

Thanks so much for the information that you have given us so far. This will be so helpful to us....I'm going to switch directions a bit and get a little more specific, so I'd like to ask you some questions about your experience coming to this particular food pantry.

- Walk me through a typical day that you come to the pantry describing all the things that happen while you're here.
- Can you tell me how you usually feel while at the food pantry?
 - [Probe] for a sense of community, embarrassment, or ostracization
- How do you decide when to come to the food pantry?
 - [Probe] for frequency, decisions, events
 - [Probe] for first time coming to the food pantry and their experience
- What foods do you usually get from the food pantry?
 - How do you use these foods?
 - [Probe] for cooking
- How would you describe the quality and usefulness of foods that you get at the food pantry?
- What foods and/or drinks available here do you like best? Why?
- What foods and/or drinks available here do you like least? Why?
 - [Probe] for personal or household preference, nutrition, ease of preparation
- What foods do you get from the pantry that you do not use?
 - What do you do with this food?
- What would you do with fresh fruits and vegetables from the food pantry?
- What are the things you appreciate/like most about this food pantry?
 - [Probe] for food items and potential additional services
- What are the things you wish you could change about this food pantry?

If applicable (depending on pantry distribution style):

- How do you decide which types of food and drinks to take from the food pantry?
 - How do you decide how much of each item to take?
 - How do these decisions change between distributions?
- Is there anything else that you would like to tell me?

Great, thank you so much. Your input has been extremely helpful and I really appreciate your cooperation. If there isn't anything else you'd like to add, I will turn off the recorder now [TURN RECORDER OFF].

Section 3 – Health History

13. How much do you currently weigh?: _____ pounds

14. How tall are you?: _____ feet _____ inches

15. In this section, you will be asked about your medical history. [Check ONE answer per condition.]

	Has a doctor or nurse ever told you that you have...
a. Overweight or obesity	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
b. Heart disease	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
c. High Blood Pressure	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
d. Type 2 Diabetes	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
e. Cancer	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know

Section 4 – Food Security

Please read the following statements people have made about their food situation. For these statements, please tell me whether the statement was often true, sometimes true, or never true for (you/your household) in the last 12 months—that is, since last (name of current month).

16. "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more."

Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

17. "(I/we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

18. In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

- ☐ Yes
- ☐ No (Skip a)
- ☐ DK (Skip a)

19. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- ☐ Almost every month
- ☐ Some months but not every month
- ☐ Only 1 or 2 months
- ☐ DK

20. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ DK

21. In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ DK

22. What is your favorite breakfast food?

23. What is your favorite dinner meal?

VITA

Adeline Grier-Welch graduated from Michigan State University in May 2016 with a Bachelor of Science in Dietetics and minor in Health Promotion and began graduate school at the University of Tennessee in August 2016. During graduate school, Adeline served as both a graduate teaching assistant for Nutrition 100 and a graduate research assistant in the Healthful Eating and Active Living Through Healthy Environments (HEALTHY) Lab. Adeline will complete her 7-week block field experience at the Minnesota Department of Health (MDH), assessing the food environment of a nearby county to develop a best practices guide for healthy food access that will be used to train local public health staff. Adeline is pursuing a dual master's degree: Master of Science (MS) in Public Health Nutrition and Master of Public Health (MPH) with a Community Health Education concentration. Her interests include food security, food access, and food acquisition. Adeline's long-term career goal is to work to improve healthy food access among underserved populations.